

**Figure 1. Amino Acid Sequences of Murine 1A6 and Human Consensus Sequences of Heavy Chain Subgroup III (HumIII) and Light Chain  $\kappa$  Subgroup I (Hum $\kappa$ I).**

**V<sub>H</sub> Domain**

	1	11	21	31	41
Mouse1A6	EVQLQQSGAE	LVKPGASLKL	SCTASGFNIK	DTYIHWKQR	PEQGLEWIGR
	**	**	*	*	**

HumIII	EVQLVESGGG	LVQPGGSLRL	SCAASGFNFS	-----WVRQA	PGKGLEWVA--
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	51 a	61	71	81 a bc	91
Mouse1A6	IDPANDNTIYD	PKVQGKATMT	ADTSS NTAYL	QLNSLTSEDTAVY	YCTT
		**	*	*	**

HumIII	-----A	DSVKGRF	TIS	RDDSKNTAYL	QMNSLRAEDTAVY	YCTT
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	103	111
Mouse1A6	SGYWFA	YWGQGTSLVT VSS

HumIII	-----WGQGTSLVT VSS
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**V<sub>L</sub> Domain**

	1	11	21	31	41	51
Mouse1A6	DIVLTQSPAT	LSVTPGDSVS	LSCRASQSI	NNLHWYQQKH	SESPRLLIKH	ASQ
	**	**	***	*	*	*

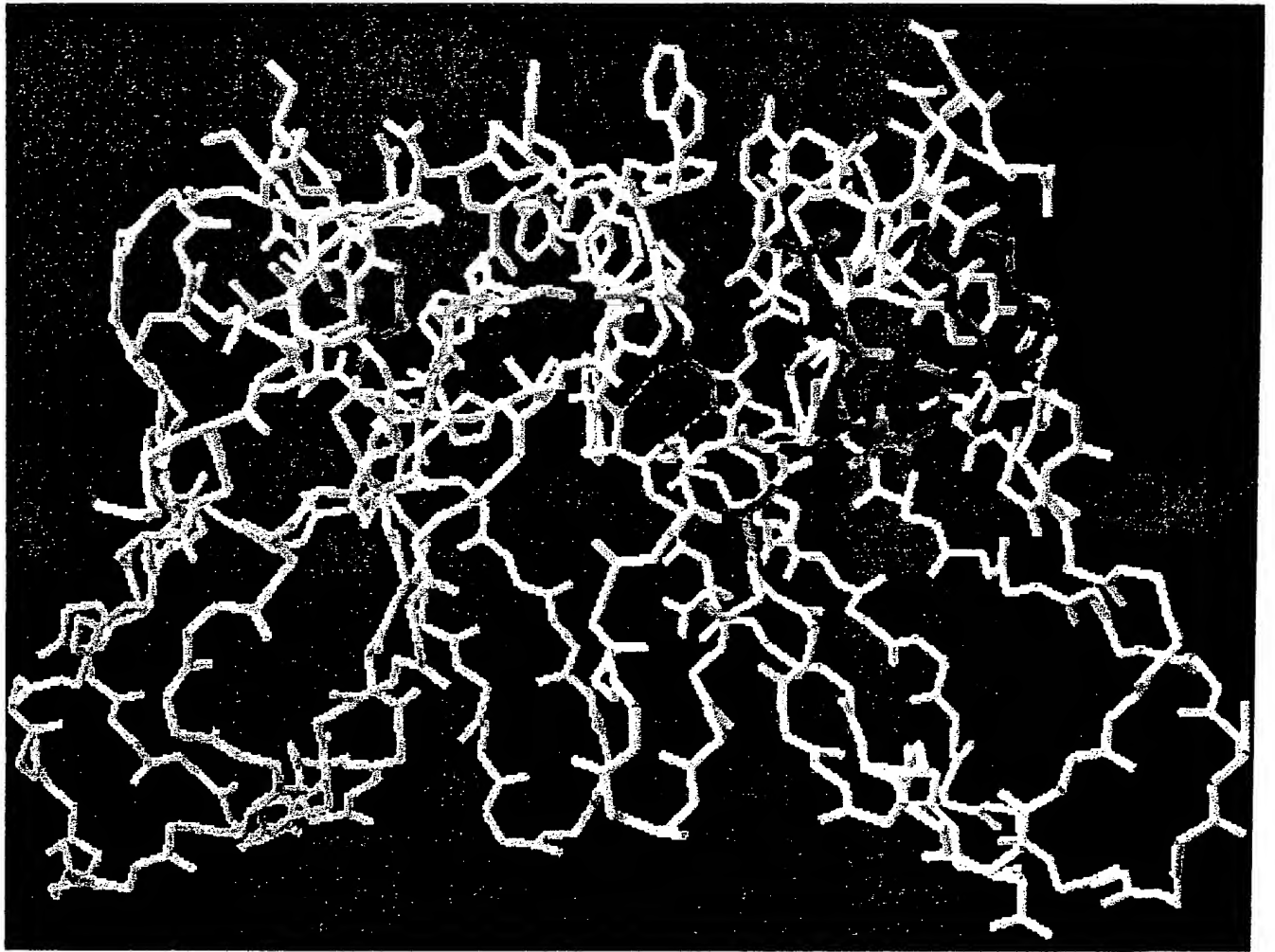
Hum $\kappa$ I	DIQMTQSPSS	LSASVGDRVT	ITC-----	-----WYQQKP	GKAPKLLIY	--
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	61	71	81	91	101	
Mouse1A6	SISG I PS	RFSGSGSGTD	FTLSINSVET	EDFGMFFCQQ	SNSWPYTFGG	GTKLEIKR
	*	*	*	*	*	*

Hum $\kappa$ I	---GVPS	RFSGSGSGTD	FTLTSSLQP	EDFATYYC	-----FGQ	GTKVEIKR
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The CDR residues as defined by both Kabat and Chothia are shown in boldface.

Fig. 2A



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**Fig. 2B**

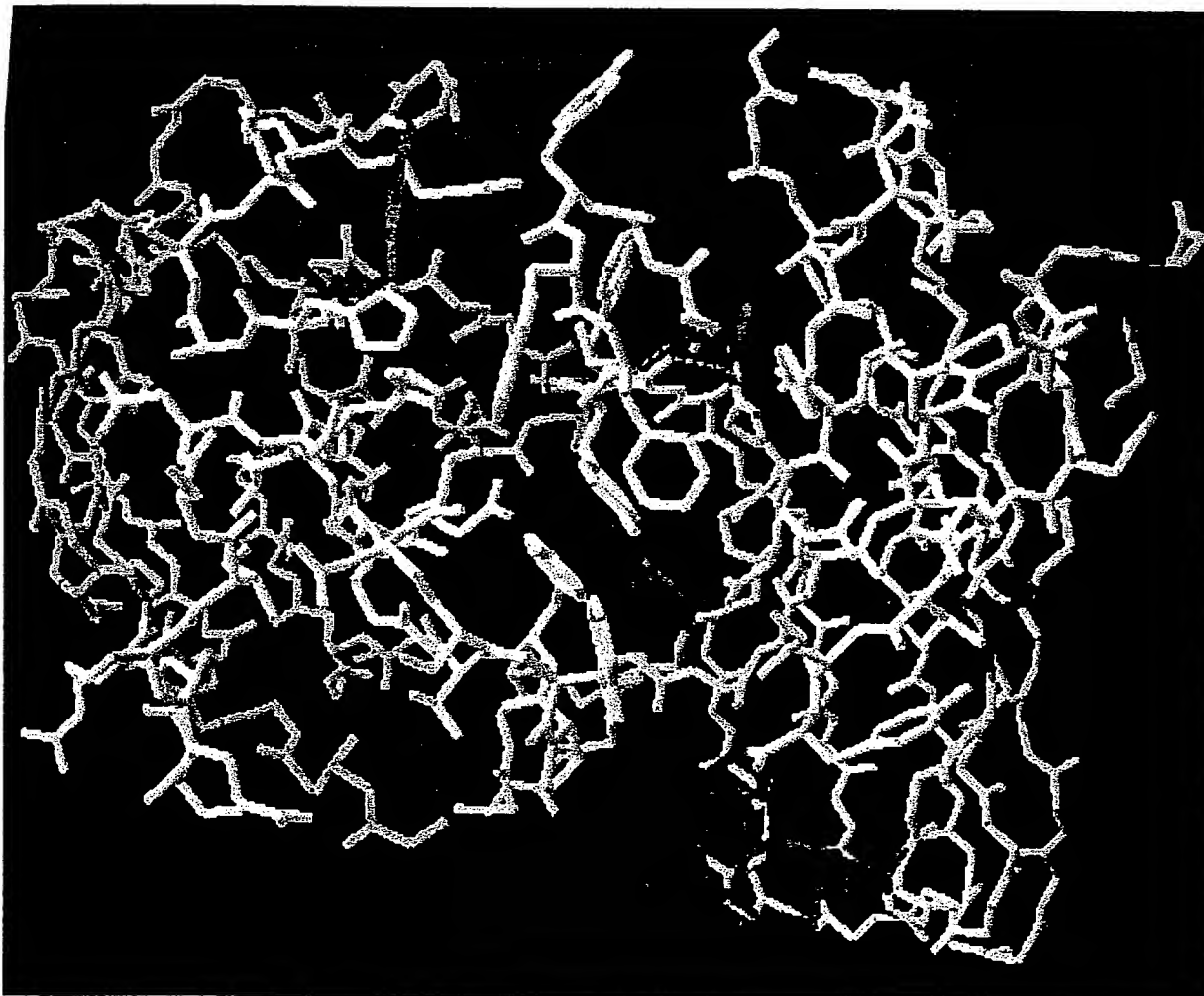
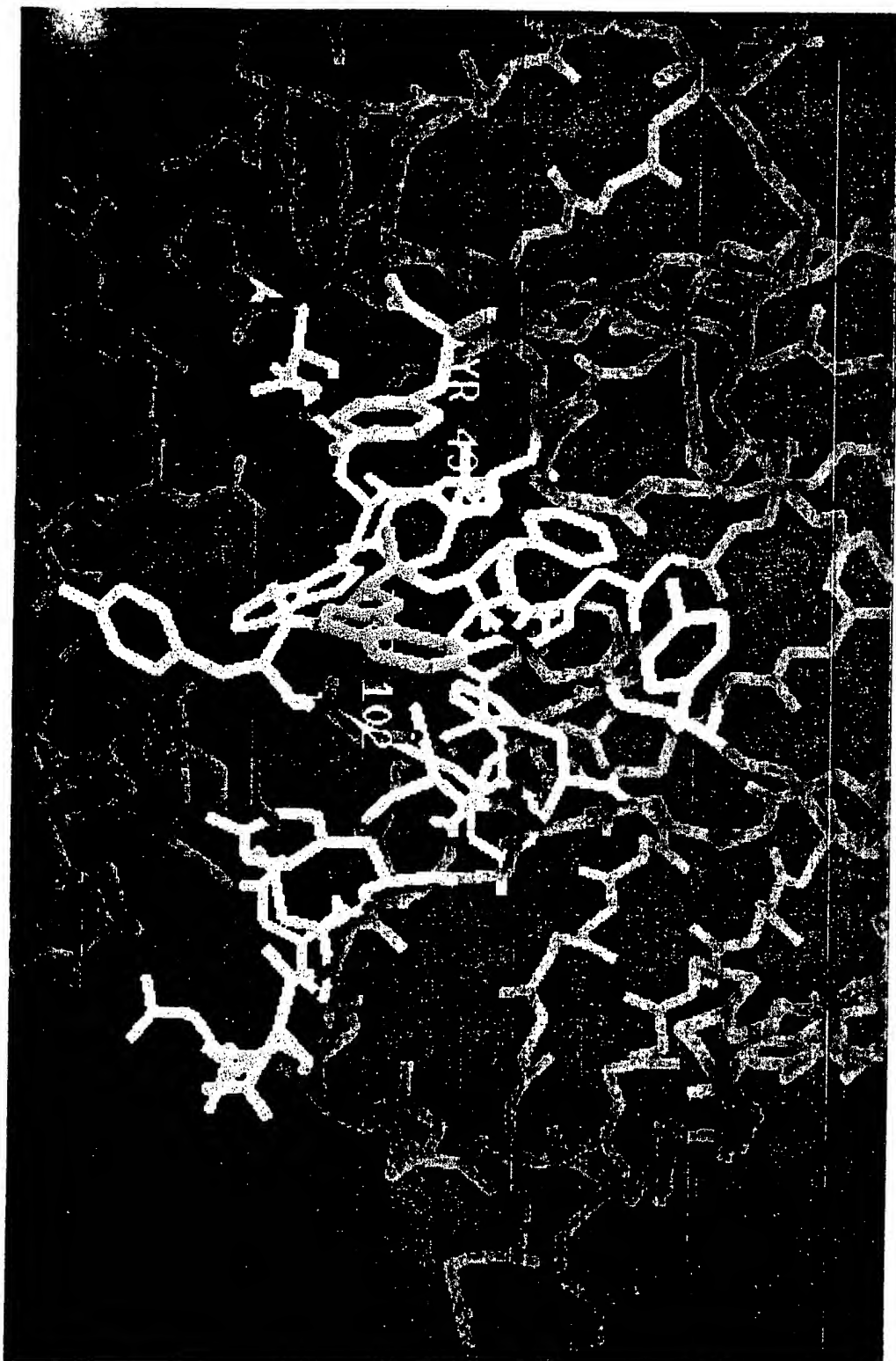


Fig. 2C



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**Figure 3. Amino Acid Sequences of Murine 1A6, Humanized 1A6 (Hum19), and Human Consensus Sequences of Heavy Chain Subgroup III (HumIII) and Light Chain  $\kappa$  Subgroup I (HumKI).**

<b>V<sub>H</sub> Domain</b>	
	1                      11                      21                      31                      41
Mouse	EVQLQQSGAE LVKPGASLKL SCTASGFNIK <b>DTYIHWMKQR</b> PEQGLEWI GR * * * * *
Hum19	EVQLVESGGG LVQPGGSLRL SCAASGFNIK <b>DTYIHWVRQA</b> PGKGLEWVAR
HumIII	EVQLVESGGG LVQPGGSLRL SCAASGFNFS -----WVRQA PGKGLEWVA—
	51 a                      61                      71                      81 a bc                      91
Mouse	IDPANDNTIYD PKVQ GKATMT ADTSS NTAYL <b>QL NSLTSEDTAVY</b> YCT T * * * * *
Hum19	IDPANDNTIYA DSVKG RFT IS SDDSKNTAYL QMNSLRAEDTAVY YCTA *
HumIII	-----A DSVKG RFT IS RDDSKNTAYL QMNSLRAEDTAVY YCTR
	103                      111
Mouse	SGYWFA YWGQGT LVT VSS
Hum19	SGYWFA YWGQGT LVT VSS
HumIII	-----WGQGT LVT VSS
<b>V<sub>L</sub> Domain</b>	
	1                      11                      21                      31                      41                      51
Mouse	DIVLTQSPAT LSVTPGDSVS LSCRASQ <sup>S</sup> IS NNLHWYQ <sup>Q</sup> QH SESPRL <sup>L</sup> IKH ASQ * * * * *
Hum19	DIQMTQSPSS LSASVGDRVT ITCRASQ <sup>S</sup> IS NNLHWYQ <sup>Q</sup> KP GKAPKLLI <sup>Y</sup> H ASQ
HumKI	DIQMTQSPSS LSASVGDRVT ITC----- WYQ <sup>Q</sup> KP GKAPKLLI <sup>Y</sup> -- ----
	61                      71                      81                      91                      101
Mouse	SISG I PS RFSGSGSGTD FTL <sup>S</sup> INSVET ED <sup>F</sup> GMFFC <sup>Q</sup> Q SNSWPYTFGG GTKLEIKR * * * * *
Hum19	SISGVPS RFSGSGSGTD FTLTISSLQ <sup>P</sup> ED <sup>F</sup> FATY <sup>Y</sup> C <sup>Q</sup> Q SNSWPYTFGQ GTKVEIKR
HumKI	---GVPS RFSGSGSGTD FTLTISSLQ <sup>P</sup> ED <sup>F</sup> FATY <sup>Y</sup> C --- FGQ GTKVEIKR

The CDR residues as defined by both Kabat and Chothia are shown in boldface.

**Figure 4. cDNA Sequences of Humanized scFv3 (Hum3) [SEQ ID. 2].**

The restriction sites are underlined. CCATGG NCO I SITE; GGATCC BAMH I SITE; GTAAAC HPA I SITE

CGAACCATGGGCGATATC**cagatg**ACCCAATCTCCG**tctagc**CTGAGC**gccAG**  
TgttGGTgatCGAGTTaccattactTGCCGCGCCAGCCAATCTATCAGTAATAATCTTC  
ACTGGTATCAACAAaaaccgggtaaagctCCGaaaCTTCTTATCAAACACGCCTCTCAG  
AGCATTAGCGGCgttCCGAGCCGCTTCTCTGGCTCTGGCTCGGGCACGGACTTT  
ACCCTTaccATCAGCTCTcttcagccgGAAGACtttGCCaccTATtatTGTCAGCAGTCTAA  
TAGCTGGCCGTATACCTTCGGTcaaGGTACCAAGgtcGAGATTAAGCGCGGCGG  
TGGCGGTTCTGGTGGCggtggtagcggtaggcGGTGGATCCGGTGGCGGTGGCAGCGA  
AGTTCAACTTGTTGAGTCTGGTGGCGGTCTGGTTCAGCCGGGTGGCTCTCTGC  
GCCTGTCTTGCGCAGCAAGCGGTTTCAACATTAAGGACACCTACATCCATTGG  
atgAGGCAAGCTCCGGGTAAGGGTCTGGAGTGGGTGGCACGTATCGACCCGGC  
AAACGACAACACCATTTACGATCCGAAGGTGCAGGGCCGTTTTACTatgTCTGC  
GGACacCTCTAAGAACACCGCGTACCTTCAGATGAACTCTCTGCGTGCCGAGG  
ACACCGCCGTCTACTACTGCACGACCTCTGGCTACTGGTTTGCCTACTGGGGC  
CAGGGCACGCTTGTCACCGTCTCTTCTGGT**TaAaCCC**

**Figure 5. Protection of HRV15 infection by mouse 1A6 scFv (Ms1) and humanized 1A6 scFv proteins (Hs3, 4, 7, 17, 18, 19 and 21).**

